Amendments to the Claims

1. (currently amended) A method for estimating a channel impulse response in an ultra wide bandwidth (UWB) system comprising the steps of:

~~transmitting and receiving in parallel via a channel a plurality of training sequences, each training sequence being different, each training sequence being modulated at a chip rate, and each training sequence consisting of ultra-wide bandwith radio pulses;~~

~~sampling each training sequence in parallel with multiple correlators at sampling rate substantially slower than the chip rate to obtain a plurality of samples for each training sequence, in which the samples span a time interval corresponding to an impulse response of the channel; and~~

generating a training sequence;

modulating the training sequence at a chip rate to produce a modulated training sequence, the modulated training sequence being comprised of ultra wide bandwith radio pulses;

generating a training signal comprised of a plurality of repetitions of the modulated training sequence;

transmitting and receiving, via a channel, the training signal;

sampling the received training signal, in parallel, with a set of correlators to obtain a plurality of samples, in which each correlator samples the received training signal at a sampling rate substantially slower than the chip rate, each correlator samples the received training signal at a different delay for each repetition of the modulated training sequence in the received training signal, and such that the plurality of samples spans a time interval

corresponding to an impulse response of the channel at a resolution substantially equal to the chip rate; and

estimating the impulse response of the channel over the time interval corresponding to the impulse response of the channel from the plurality of samples ~~of the plurality of training sequences at a resolution substantially equal to the chip rate~~.

2. (currently amended) The method of claim 1, in which ~~each training sequence is passed through *n* correlators to generate *n* samples for each correlator~~ the training signal comprises *m* repetitions of the modulated training sequence, and further comprising:

sampling, in each of *n* correlators, the training signal *k* times per repetition of the modulated training sequence in the received training signal to produce $m \times n \times k$ samples of the received training signal.

3. (original) The method of claim 1, in which the sampling rate is at least ten times slower than the chip rate.

4. (currently amended) The method of claim 1, in which the sampling rate is equal to a symbol rate of the training sequence.

5. (previously presented) The method of claim 1, further comprising:

estimating equalizer coefficients from an equalizer training sequence consisting of radio pulses.

6. (currently amended) The method of claim 1, further comprising:

estimating weights for the corresponding correlators to acquire most of the available energy of a data signal received via the ~~estimated~~ channel, in which the data signal consists ~~of the ultra~~ of ultra wide bandwith radio pulses.

7. (currently amended) The method of claim 1, in which a first subset of the plurality of samples are used for a rough estimate of the impulse response of the channel, and a second subset of the plurality of samples are used for an accurate estimate of the impulse response of the channel based on the rough estimate.

8. (currently amended) The method of claim 1, in which the estimate of the impulse response of the channel is based on a previous estimate of the ~~channel impulse response~~ impulse response of the channel.

9. (currently amended) The method of ~~claim 1~~ claim 2, where k is greater than one.

10. (currently amended) The method of ~~claim 1~~ claim 3, in which the chip rate is ~~chip rate~~ on the order of 10 GHz.

11. (currently amended) The method of claim 7, in which the second subset of the plurality of samples are obtained from training sequences received after obtaining the first subset of the plurality of samples.

12. (new) The method of claim 2, where k is equal to one.